

APPENDIX

combine to support the highest aquatic biological diversity along the US East coast (excluding Florida). For example, there are at least 800 species of fishes occurring within and off of North Carolina from the estuaries offshore to a depth of 200 m, and this is more fish species than any other US coastal state except Florida.

The Gulf Stream is a major influence on the region's marine biology and ecology, but also on regional climate and commerce. This river of warm water brings moderate climates to the US East coast and to northwestern Europe. It is a complicated current that displays many types of eddies and spin off rings, undulations or meanders, and it can have an influence on the water column or bottom as deep as 300-400 m. Large numbers of larval animals ride the Gulf Stream north and settle in more inshore habitats. Some larger animals use the Gulf Stream as a migratory corridor. Near Cape Hatteras the Gulf Stream veers northeastward, and also in this area it encounters several other major currents (see Fig. 1). This happens near an area that has become known as "The Point," and the complicated oceanography and rugged canyon bottom topography make this a unique region. It is known as one of the best recreational fishing spots on the East coast. The physics around this area causes a high deposition of organic carbon to the bottom, and there is periodic upwelling of nutrient rich waters here which attracts a wide array of animals from pelagic seabirds, to marine mammals, and fishes. Buried features on the bottom around The Point region were also of interest previously for oil exploration.

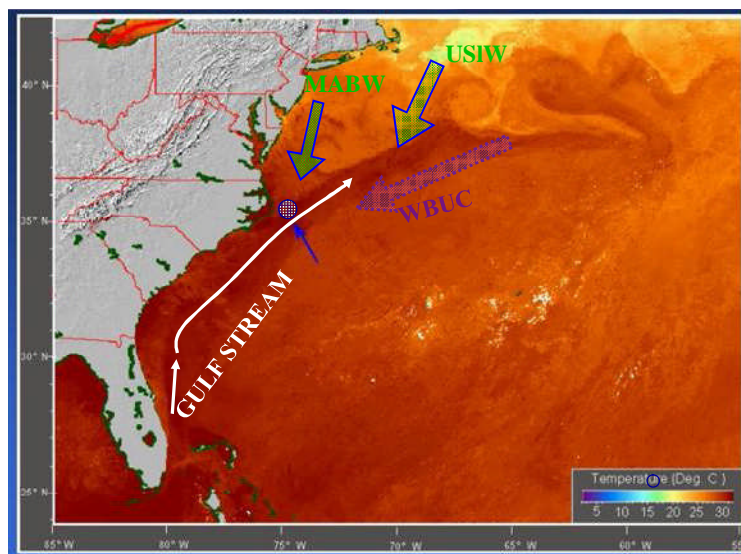


Fig.1. Summer satellite view of the Gulf Stream (darkest red), and a few water masses, the Mid-Atlantic Bight water (ABW) and Upper slope water (USLW). The Western Boundary Undercurrent (WBUC) flows underneath the Gulf Stream in the opposite direction. These currents converge near "The Point" (blue circle, arrow).